

a larger capital stock would be in order. This alternative must be weighed against the fact that H.R. 3030 would provide an interest-free loan to the system, would exempt borrowers from capital losses, and would reduce the FCS's joint liability for capital shortfalls, all at the expense of the taxpayer.

H.R. 3030 has also been characterized as containing more explicit policy messages: that the system should return to its original mission, and that borrowers from the FCS who are in financial difficulty should be given special dispensation.

During the nineteenth century, agrarian populists were active in demanding an improved supply of capital for agriculture. One of the original purposes of the FCS was to respond to this need by providing farmers with greater control over their supply of credit. H.R. 3030 seeks to increase borrower control over credit by increasing the power and responsibility of the local associations.

It is clear that the distribution of decisionmaking power would be rearranged by enactment of H.R. 3030. Less certain is the degree to which farmer control over the supply of credit would be enhanced. One issue is what sort of relationship would develop between the Farm Credit Administration, the system's regulator, and the local associations. Some fear that the FCA might dominate such a relationship, thereby diminishing the true extent of local control. A second question is whether or not the local associations would have sufficient expertise to manage their fund-raising responsibilities (in national capital markets) and their lending activities. If local associations are ill-equipped to deal with both of these activities simultaneously, the probability that they would fail would be increased by H.R. 3030. Finally, there is some danger that the unity of the system could be undermined by the effort to increase local control.

Part of the motivation behind H.R. 3030 is the desire to provide assistance to farmers experiencing financial stress. However, as discussed in an earlier chapter, a number of questions arise as to the equity of requiring the FCS to behave in a certain way toward financially stressed borrowers while allowing competing lenders to abide by a different set of rules. These provisions are likely to put the FCS at a competitive disadvantage to other lenders and to increase the amount of federal assistance required to return the system to financial health.

Moreover, some of the benefits offered by H.R. 3030 are already available to all agricultural borrowers through Chapter 12 of the federal bankruptcy statutes.

Probable Impacts of S. 1665 on the Farm Credit System

The Senate bill has the same general policy goals as the House bill but places much greater priority on minimizing the budgetary impact of the legislation. The most prominent example of this priority is the nature of the funding mechanism employed by S. 1665. To generate funds for financially stressed institutions, the Senate bill would allow the FCS to issue bonds backed by a federal government guarantee and approximately \$250 million of system capital. By structuring the assistance in this way, it would move up to \$4.0 billion worth of bonds off the budget--so that only payments equal to the amount of interest due on the bonds would be counted as federal outlays.

Another example of the effort to minimize budgetary exposure is the requirement that the FCS use one-quarter of the existing stock of borrower capital before assistance begins--as compared to the House bill, which would commence assistance as soon as the value of borrower stock fell below par. In both bills all existing stock would be guaranteed to be redeemed at par. By delaying the initiation of assistance, the Senate bill could change the amount of assistance needed to redeem this guaranteed stock. For example, if the financial condition of the FCS improved, more system capital would be used to pay off borrower capital.

Finally, the Senate bill would be much less active in rebuilding the system's depleted capital stocks. Assistance would not be provided by S. 1665 to enable system institutions to attain prescribed minimum capital levels. In addition, the insurance program defined in the Senate bill would not begin to collect premiums until 1992. As noted above, the FCS is projected to have a much smaller capital stock in 1992 under the Senate bill than under the House bill. The Senate's approach represents an implicit belief that the worst is behind the FCS, so that federal assistance would serve as a bridge to better financial times rather than being a major recapitalization effort.

While S. 1665 would have a substantially smaller impact on the budget than would H.R. 3030, their effect on national capital markets would be more similar. The Senate bill is estimated to increase federal expenditures by approximately \$0.8 billion between enactment and 1992, but would withdraw an expected \$3.1 billion of capital from national bond markets. The House bill is estimated to cost the government \$6.2 billion over the same time period and would withdraw this amount of capital from the bond markets. Thus, while the budgetary impact of the House bill is nearly eight times as great as the Senate bill, its draw on the bond markets is only twice as great.

The Senate bill would also have the hidden budgetary impact of diminishing the ability of the federal budget to measure governmental expenditures. The Financial Assistance Corporation and the Assistance Board, to be created by the Senate bill, would sell the uncollateralized bonds and manage the distribution of the capital so generated. Both would be creations of the government and would carry out a function (financial assistance) that is normally a governmental function. Yet they would be nominally a part of the FCS (a private entity). In addition, the system would have an equity share in them, so there is a rationale for keeping their activities off the budget. But there would be no essential difference between the bonds issued by the FAC under the Senate bill and the government bonds that would be sold under the House plan: only the name of the payer would be different. The size of the program's claim on the nation's credit resources would not be changed by moving its costs off the budget. In fact, to the extent that the interest rate paid on the uncollateralized bonds exceeded the government's cost of funds, the program's claim on national resources would actually increase. What would be lost is the accuracy of the budget as a measuring device--a cost that is difficult to quantify but is, nevertheless, important.

CONCLUSION

The causes of the Farm Credit System's financial problems are diverse and complex. Likewise, the legislation designed to aid the system is complex and involves a number of difficult trade-offs. Among the key issues are: How much reform can be demanded of the FCS before it ceases to be a commercial enterprise and becomes an agent of social

policy? To what extent can the truly distressing outcomes of foreclosure be mitigated without placing the FCS at a competitive disadvantage relative to other lenders, or creating an incentive for borrowers to become delinquent on their loans? How much emphasis should be placed on forcing the system to make full use of its existing capital as contrasted to building a sufficiently large capital stock to enable it to survive future downturns in the farm economy? The two bills under consideration implicitly represent opposing answers to these questions.

APPENDIX

DESCRIPTION OF THE MODEL

The model of the Farm Credit System used in this analysis is an annual accounting model. Because the financial stress in the system is concentrated in the Federal Land Banks (FLBs) and, to a lesser extent, in the Federal Intermediate Credit Banks (FICBs) and Production Credit Associations (PCAs), these parts are modeled at the district bank level. To generate systemwide measures of financial health, the Banks for Cooperatives (BCs) are modeled as a unit at the national level.

A SIMPLE MATHEMATICAL DERIVATION OF THE MODEL

Actual financial data for the FCS from 1985 and 1986 were used to develop the model. The model generates a simplified income and balance sheet statement using Generally Accepted Accounting Principles (GAAP). The model is based on a system of two equations with two unknowns: system debt and net income. The basic model is solved in the following way. First, system debt is defined by the accounting identity:

$$L = A - z1 - z2$$

where

L = System Debt

A = Total Assets

z1 = Earned Surplus

z2 = Borrower Capital.

This equation simply says that liabilities are equal to total assets less net worth. Net income is also defined as an accounting identity. Total revenues less total expenses and loan loss provisions equal net income.

$$I = x1 + x2 - x3 - x4 - x5$$

where

- I = Net income
- x1 = Interest Income
- x2 = Other Income
- x3 = Interest Expense
- x4 = Operating Expense
- x5 = Loan Loss Provisions.

Earned surplus in the current period, $z1$, is equal to earned surplus in the previous period, which will be called $z0$, plus this period's net income. Furthermore, interest expenses, $x3$, are equal to the average interest paid, r , times system debt. Substituting these definitions into the two equations yields:

$$L = A - z0 - I - z2$$

$$I = x1 + x2 - rL - x4 - x5.$$

Substituting the new definition for I into the equation for L and solving for L , we get:

$$L = (A - z0 - z2 - x1 - x2 + x4 + x5)/(1 - r).$$

Variations of this equation are used throughout the modeling process.

DETAILS OF MODEL VARIABLES

In the model, assets are grouped into five components: performing loans, investments and cash, other nonearning assets, nonaccrual loans, and loan loss reserves. Performing loans include the outstanding principal of all loans that are current. The composition of cash and investments is self-explanatory and is an indication of the bank's liquidity. Other nonearning assets include accrued interest receivable on loans, the net value of premises and equipment, other owned property (including acquired properties), and other assets and deferred charges. A loan is placed in the nonaccrual category when

interest or principal are 90 days or more past due or if other circumstances place continued repayments in doubt.

Liabilities and capital consist of total system debt, surplus or deficit, and borrower capital. Total system debt includes all system bonds, notes, accrued interest payable, and other liabilities. Surplus or deficit is the system's earned net worth, and borrower capital includes outstanding borrower stock and participation certificates.

Revenue sources in the income statement consist of interest income and income from other sources. Interest income includes returns from performing loans and from investments. Income from other sources includes fees for services and other miscellaneous adjustments. Expenses include interest on bonds and notes, the cost of operations, and provisions for loan losses. Finally, there is a line for transfers to or from other system entities. Such transfers would include assessments made by the Capital Corporation or its successor, and loss-sharing assessments.

ASSUMPTIONS APPLIED TO THE INCOME STATEMENT

During the projection period, interest income is based on the level of performing loans and investments, and an assumed interest rate charged by the district. The assumed interest rate charged is based on historical rates and the maintenance of a minimum percentage mark-up. In the 1990s, a minimum margin of 2 percent above the cost of funds is maintained.

Interest expenses are calculated in two steps. First, the cost of debt that is already on the books of the banks is estimated. This cost is based on an assumed rate of paydown and on the average interest rate on these bonds as calculated by the FCS in data prepared for testimony before the Senate Committee on Agriculture. The interest rate for newly issued bonds is based on the CBO baseline estimate for five-year Treasury bonds plus 25 basis points.

Additions to loan losses are calculated as a percentage of loans outstanding, where the percentage is determined relative to the experience in the most recent historical period. Other income has

been relatively stable and is assumed to remain at the average level of 1985 and 1986. Operating expenses are assumed to fall by 5 percent per year in the base case scenario. Finally, it is assumed that no additional transfers of capital are made between system entities.

ASSUMPTIONS APPLIED TO THE BALANCE SHEET

As shown in the mathematical derivation, debt adjusts to balance the books in this model. System debt is a function of the previous period's surplus, current-level total assets, borrower capital, and net income. Borrower capital is set at 10 percent of total loans outstanding for FICB/PCAs and BCs, and at 5 percent for FLBs.

The model's projection of financial conditions in the FCS is driven mainly by the asset side of the balance sheet. Therefore, the assumptions made about these assets are crucially important to the accuracy of the results. Probably the most important and most difficult variable to project is the level of performing loans. Not only is this variable used in the calculation of other model variables, but it is also the largest asset in the balance sheet. The level of performing loans has fallen dramatically in the past two years, and this trend is expected to continue in the near term. In the scenarios to be discussed, different rates of decline and recovery for performing loans are examined.

Recently, the system has increased the amount of cash and investments it holds. In part this increase reflects a decline in farmer demand for debt. In addition, the system has purposely increased its liquidity in order to meet unexpected cash expenses during this period of financial stress. In the projections, the level of investments and cash was assumed to fall substantially from 1987 through 1990 and to stabilize thereafter. Other nonearning assets are assumed to decline by 10 percent per year.

In the model, nonaccrual loans are calculated according to the following accounting identity:

$$\begin{aligned} &\text{opening amount of nonaccruals} + \text{new amounts} - \text{gross charge-offs} \\ &= \text{closing amount of nonaccruals.} \end{aligned}$$

New amounts of nonaccruals are a function of past levels of new nonaccruals and are assumed to decline over time at rates that vary across scenarios. Gross charge-offs measure the amount of a bank's assets that are written off during the period. All or part of a loan may be written off as part of a restructuring, foreclosure, or bankruptcy. The amount charged off in a given period is assumed to be some percentage of the closing level of nonaccruals in the previous period. The precise percentage differs in various scenarios.

Loan loss reserves are also calculated as an accounting identity:

$$\text{opening amounts} - \text{net loss on charge-offs} + \text{additions to loan loss reserves} = \text{closing amounts.}$$

The net loss on charge-offs is the difference between the book value of an asset that is charged off and the actual amount received for it when it is sold. The net loss is a function of the level of charge-offs during the period, the strength of the asset market, and the priority of the FCS relative to other creditors with an interest in the asset in question. In the model, it is assumed that asset markets strengthen during the period so that net losses on charge-offs stabilize at 25 percent of gross charge-offs. Additions to loan losses during the projection decline at varying rates from the average additions to loan losses in 1985 and 1986.

Details about the specific assumptions employed for the variables in the model in each of the three scenarios considered are summarized in Tables A-1, A-2, and A-3. A sample of the output produced by the model is presented in Table A-4. The results in A-4 are for a projection using the most likely assumptions for the pre-legislation case. Only system totals are included in Table A-4.

TABLE A-1. PROJECTED FINANCIAL STATEMENTS:
MOST LIKELY ASSUMPTIONS

	1987	1988	1989	1990	1991	1992
Performing loans (percent change from previous year)	<u>a/</u>	<u>a/</u>	0	5	5	5
Investments (percent change from previous year)	-25	-25	-25	0	0	0
New nonaccrual loans (percent change from previous year)	-70	-25	-25	-25	0	0
Charge-offs (percent of opening nonaccruals)	40	40	40	30	30	30
Net loss on charge-offs (percent of gross charge-offs)	50	25	25	25	25	25
Addition to loan-loss allowance (percent change from previous year)	<u>b/</u>	0	5	5	5	5
Interest charged (percent change from previous year unless otherwise stated)	0	-2.5	0	2 percent above cost	2 percent above cost	2 percent above cost

SOURCE: Congressional Budget Office projections from an annual accounting model.

NOTE: Nonearning assets other than performing loans and investments decline by 10 percent per year over the course of the projection. Interest paid on debt is 25 basis points above the five-year interest rate found in the CBO macroeconomic baseline throughout the period. Borrower capital varies from 5 percent to 10 percent of total loans throughout the period.

- a. Decline at one-quarter the rate observed during the previous year.
- b. One-eighth of the average for 1985 and 1986.

TABLE A-2. PROJECTED FINANCIAL STATEMENTS:
OPTIMISTIC ASSUMPTIONS

	1987	1988	1989	1990	1991	1992
Performing loans (percent change from previous year)	<u>a/</u>	0	5	5	5	5
Investments (percent change from previous year)	-25	-25	-25	0	0	0
New nonaccrual loans (percent change from previous year)	-75	-25	-25	-25	0	0
Charge-offs (percent of opening nonaccruals)	40	40	30	30	30	30
Net loss on charge-offs (percent of gross charge-offs)	50	25	25	25	25	25
Addition to loan-loss allowance (percent change from previous year)	<u>b/</u>	0	5	5	5	5
Interest charged (percent change from previous year unless otherwise stated)	0	-2.5	0	2 percent above cost	2 percent above cost	2 percent above cost

SOURCE: Congressional Budget Office projections from an annual accounting model.

NOTE: Nonearning assets other than performing loans and investments decline by 10 percent per year over the course of the projection. Interest paid on debt is 50 basis points above the five-year interest rate found in the CBO macroeconomic baseline throughout the period. Borrower capital varies from 5 percent to 10 percent of total loans throughout the period.

- a. Decline at one-eighth the rate observed during the previous year.
- b. One-eighth of the average for 1985 and 1986.

TABLE A-3. PROJECTED FINANCIAL STATEMENTS:
PESSIMISTIC ASSUMPTIONS

	1987	1988	1989	1990	1991	1992
Performing loans (percent change from previous year)	<u>a/</u>	<u>a/</u>	0	2.5	5.0	5.0
Investments (percent change from previous year)	-25	-25	-25	0	0	0
New nonaccrual loans (percent change from previous year)	-65	-25	-25	-25	0	0
Charge-offs (percent of opening nonaccruals)	40	50	40	40	30	30
Net loss on charge-offs (percent of gross charge-offs)	50	25	25	25	25	25
Addition to loan-loss allowance (percent change from previous year)	<u>b/</u>	0	5	5	5	5
Interest charged (percent change from previous year unless otherwise stated)	0	-5	0	2 percent above cost	2 percent above cost	2 percent above cost

SOURCE: Congressional Budget Office projections from an annual accounting model.

NOTE: Nonearning assets other than performing loans and investments decline by 10 percent per year over the course of the projection. Interest paid on debt is 25 basis points above the five-year interest rate found in the CBO macroeconomic baseline throughout the period. Borrower capital varies from 5 percent to 10 percent of total loans throughout the period.

- a. Decline at one-half the rate observed during the previous year.
- b. One-eighth of the average for 1985 and 1986.

TABLE A-4. PROJECTED FINANCIAL STATEMENTS:
BASE CASE, MOST LIKELY ASSUMPTIONS

	1985	1986	1987	1988	1989	1990	1991	1992
Income Statement								
Interest income	9.0	7.2	7.3	6.6	6.3	5.9	5.6	5.4
Other income	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Interest expenses	-7.7	-6.4	-6.5	-5.3	-4.8	-4.3	-4.1	-3.9
Operating expenses	-1.5	-1.1	-1.0	-1.0	-0.9	-0.9	-0.8	-0.8
Provisions for loan losses	-3.0	-1.8	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3
Assistance from (to) system entities	0.3	0.0	0.0	1.2	0.6	0.3	0.3	0.2
Net income	-2.7	-1.9	-0.3	1.5	1.2	1.0	0.9	0.8
Balance Sheet								
Assets								
Performing loans	64.4	51.1	47.8	47.0	47.0	49.3	51.8	54.4
Investments	8.3	11.3	8.5	6.3	4.8	4.8	4.8	4.8
Other nonearning assets	5.6	5.1	4.6	4.1	3.7	3.3	3.0	2.7
Nonaccrual loans	5.4	7.1	5.9	4.8	3.8	3.4	3.1	2.9
Less loan loss reserves	-3.2	-3.6	-2.5	-1.6	-1.2	-1.1	-1.0	-0.9
Total assets	80.5	71.0	64.3	60.7	58.0	59.7	61.6	63.8
Liabilities and Capital								
System debt	72.2	65.3	59.5	54.6	50.8	51.4	52.2	53.4
Surplus or deficit	3.4	1.5	1.2	2.7	3.8	4.8	5.7	6.6
Borrower capital	5.0	4.2	3.6	3.5	3.4	3.5	3.7	3.8
Total capital	8.4	5.6	4.7	6.1	7.2	8.4	9.4	10.4
Total liabilities and capital	80.5	71.0	64.3	60.7	58.0	59.7	61.6	63.8
Cum. GAAP shortfall								
Net GAAP shortfall	n.a.	n.a.	-1.2	-1.8	-2.2	-2.4	-2.6	-2.8
Net GAAP shortfall	n.a.	n.a.	-1.2	-0.6	-0.3	-0.3	-0.2	-0.2

SOURCE: Congressional Budget Office projections from an annual accounting model.

NOTE: n.a. = not applicable.







